Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) Method for measuring a switched current ~~(I_H)~~ which is periodically switched on and off with use of a switch, and providing a measuring signal ~~(S1)~~ accurately reflecting said switched current ~~(I_H)~~, the method comprising ~~the steps of~~:

[[-]] sensing said switched current ~~(I_H)~~ with a current sensor ~~(120)~~ to obtain an intermediate measuring signal ~~(V_{HM})~~ corresponding to an AC part of said switched current, wherein the current sensor includes an AC current transformer having a primary winding coupled in series with the switch, the AC current transformer further having a secondary winding for providing the intermediate measuring signal ~~(I_H)~~;

[[-]] receiving a timing signal indicating the on and off periods of the switched current ~~(I_H)~~;

[[-]] during an off period of the switch, generating an auxiliary signal ~~($V_{OFF,H}$)~~ such that the sum of said intermediate measuring signal and said auxiliary signal is equal to zero; and

[[-]] during an on period of the switch, adding (i) said intermediate measuring signal that was generated during the off period and (ii) said auxiliary signal and providing the sum signal as the ~~output~~ measuring signal ~~(S1)~~ of the switched current.

2. (Original) Method according to claim 1, wherein the timing signal is a switch control signal.

3. (Currently Amended) Method for measuring a switched bridge current ~~(I_4)~~ and for providing a measuring signal ~~(S3)~~ accurately reflecting said current ~~(I_4)~~, said switched bridge current ~~(I_4)~~ being periodically switched between a first current source and a second current source in a bridge ~~(1)~~ which comprises a first branch ~~(21)~~ providing a

first switched current ~~(I_H)~~ corresponding to the first current source and a second branch ~~(22)~~ providing a second switched current ~~(I_L)~~ corresponding to the second current source, the method comprising the steps of:

[[-]] providing a first measuring signal ~~(S1)~~ reflecting the first switched current, wherein providing the first measuring signal comprises sensing the first switched current with a first current sensor to obtain a first intermediate measuring signal corresponding to an AC part of the first switched current, wherein the first current sensor includes a first AC current transformer having a primary winding coupled in series with a first current source switch, the first AC current transformer further having a secondary winding for providing the first intermediate measuring signal; receiving a timing signal indicating the on and off periods of the first switched current; during an off period of the first switch, generating a first auxiliary signal such that the sum of the first intermediate measuring signal and the first auxiliary signal is equal to zero; during an on period of the first switch, adding (i) the first intermediate measuring signal that was generated during the off period and (ii) the first auxiliary signal and providing the sum signal as the first measuring signal; ~~(I_H) using a method according to claim 1;~~

[[-]] providing a second measuring signal ~~(S2)~~ reflecting the second switched current, wherein providing the second measuring signal comprises sensing the second switched current with a second current sensor to obtain a second intermediate measuring signal corresponding to an AC part of the second switched current, wherein the second current sensor includes a second AC current transformer having a primary winding coupled in series with a second current source switch, the second AC current transformer further having a secondary winding for providing the second intermediate measuring signal; receiving a timing signal indicating the on and off periods of the second switched current; during an off period of the second switch, generating a second auxiliary signal such that the sum of the second intermediate measuring signal and the second auxiliary signal is equal to zero; during an on period of the second switch, adding (i) the second intermediate measuring signal that was generated during the off

period and (ii) the second auxiliary signal and providing the sum signal as the second measuring signal; and ~~(I_L) using a method according to claim 1;~~

[[-]] adding the first and second measuring signals.

4. (Currently Amended) Switch current measuring circuit ~~(100)~~ for measuring a current ~~(I_H)~~ in a switch ~~(11)~~ and providing a measuring signal ~~(S1)~~ accurately reflecting said current ~~(I_H)~~, the circuit comprising:

a current sensing stage ~~(110)~~ for providing an intermediate measuring signal ~~(V_{HM})~~ corresponding to an AC part of said current; ~~(I_H),~~ and

an offset stage ~~(150)~~ for adding an offset ~~($V_{OFF,H}$)~~ to the intermediate measuring signal, wherein the current sensing stage includes a current sensor coupled in series with the switch, and wherein the offset stage is configured to receive a timing signal indicating the on and off periods of the switched current, wherein during an off period of the switch, the offset stage is further configured to generate an auxiliary signal such that the sum of the intermediate measuring signal and the auxiliary signal is equal to zero, wherein during an on period of the switch, the offset stage is further configured to add (i) the intermediate measuring signal that was generated during the off period and (ii) the auxiliary signal and to provide the sum signal as the measuring signal. ~~(V_{HM}).~~

5. (Currently Amended) Switch current measuring circuit according to claim 4, wherein the current sensor of the sensing stage ~~(110)~~ is configured to sense the switched current to obtain the intermediate measuring signal corresponding to the AC part of the switched current, wherein the current sensor comprises an AC current transformer ~~(120)~~ having a primary winding ~~(121)~~ coupled in series with the switch for sensing the current ~~(I_H)~~ to be measured, and having a secondary winding ~~(122)~~ providing ~~an~~ the intermediate measuring signal ~~(V_{HM})~~.

6. (Currently Amended) Switch current measuring circuit according to claim 5, further comprising a measuring resistor ~~(123)~~ coupled in parallel to the secondary ~~transformer~~ winding ~~(122)~~ of the AC current transformer.

7. (Currently Amended) Switch current measuring circuit according to claim 4, wherein the offset stage ~~(150)~~ further comprises an adder ~~(160)~~ having a first input ~~(161)~~ coupled to receive the intermediate measuring signal provided by the current sensing stage ~~(110)~~, and having a second input ~~(162)~~ coupled to an output of an offset generator ~~(170)~~, and having an output ~~(163)~~ for providing the output measuring signal ~~(S1)~~.

8. (Currently Amended) Switch current measuring circuit according to claim 7, wherein the offset generator ~~(170)~~ has a timing input ~~(171)~~ for receiving a signal indicating a current off period, and wherein the offset generator ~~(170)~~ further has a feedback input ~~(173)~~ coupled to the output ~~(163)~~ of the adder ~~(160)~~.

9. (Currently Amended) Switch current measuring circuit according to claim 8, wherein the timing input ~~(171)~~ of the offset generator ~~(170)~~ is coupled to a control input of the ~~first~~ switch ~~(11)~~.

10. (Currently Amended) Switch current measuring circuit according to claim 7, wherein the offset generator ~~(170)~~, during an off period of the current ~~(I_H)~~, is designed to generate an auxiliary signal ~~($V_{OFF,H}$)~~ such that the sum of said intermediate measuring signal ~~(V_{HM})~~ and said auxiliary signal ~~($V_{OFF,H}$)~~ is equal to zero; wherein the offset generator ~~(170)~~, during an on period, is designed to add said intermediate measuring signal ~~(V_{HM})~~ and said auxiliary signal ~~($V_{OFF,H}$)~~ and to provide the sum signal ~~(S1)~~ as the ~~output~~ measuring signal.

11. (Currently Amended) Current sensing circuit ~~(50)~~ for measuring a switched bridge current ~~(I_4)~~ and for providing a measuring signal ~~(S3)~~ accurately reflecting said current ~~(I_4)~~, said switched bridge current ~~(I_4)~~ being periodically switched between a first current direction and a second current direction in a bridge ~~(1)~~ which comprises a first branch ~~(21)~~ providing a first switched current ~~(I_H)~~ corresponding to the first current direction and a second branch ~~(22)~~ providing a second switched current ~~(I_L)~~ corresponding to the second current direction; the circuit ~~(50)~~ comprising:

[[-]] a first switch current measuring circuit ~~(100) according to claim 4,~~ associated with said first branch, wherein the first switch current measuring circuit comprises a first current sensing stage for providing a first intermediate measuring signal corresponding to an AC part of said first switched current, and a first offset stage for adding an offset to the first intermediate measuring signal, wherein the first current sensing stage includes a first current sensor coupled in series with a first switch of the first branch, and wherein the first offset stage is configured to receive a timing signal indicating the on and off periods of the first switched current, wherein during an off period of the first switch, the first offset stage is further configured to generate a first auxiliary signal such that the sum of the first intermediate measuring signal and the first auxiliary signal is equal to zero, wherein during an on period of the first switch, the first offset stage is further configured to add (i) the first intermediate measuring signal that was generated during the off period and (ii) the first auxiliary signal and to provide the sum signal as an output signal of the first switch current measuring circuit; ~~(21);~~

[[-]] a second switch current measuring circuit ~~(200) according to claim 4,~~ associated with said second branch, wherein the second switch current measuring circuit comprises a second current sensing stage for providing a second intermediate measuring signal corresponding to an AC part of said second switched current, and a second offset stage for adding an offset to the second intermediate measuring signal, wherein the second current sensing stage includes a second current sensor coupled in series with a second switch of the second branch, and wherein the second offset stage

is configured to receive a timing signal indicating the on and off periods of the second switched current, wherein during an off period of the second switch, the second offset stage is further configured to generate a second auxiliary signal such that the sum of the second intermediate measuring signal and the second auxiliary signal is equal to zero, wherein during an on period of the second switch, the second offset stage is further configured to add (i) the second intermediate measuring signal that was generated during the off period and (ii) the second auxiliary signal and to provide the sum signal as an output signal of the second switch current measuring circuit; and ~~(22);~~

[[-]] an adder ~~(300)~~ for adding the output signals ~~(S1, S2)~~ of the first and second switch current measuring circuits.

12. (Currently Amended) ~~Inverter circuit, comprising a~~ A current sensing circuit according to claim 11, wherein the current sensing circuit comprises a portion of an inverter circuit.

13. (Currently Amended) ~~Converter circuit, comprising a~~ A current sensing circuit according to claim 11, wherein the current sensing circuit comprises a portion of a converter circuit.

14. (Currently Amended) ~~Pulse width modulated circuit, comprising a~~ A current sensing circuit according to claim 11, wherein the current sensing circuit comprises a portion of an pulse width modulated circuit.